REMARKS

Claims 1-4 remain pending after amendment.

Specification Amendments

Various editorial revisions are made in the specification. No new matter is added by these amendments.

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Various editorial revisions are made in the specification. No new matter is added by these amendments.

Drawing Amendment

Applicants submit herewith a revised drawing for entry in the application which clarifies that elements 1 and 2 are intended to be distinguishable from each other on the drawing. No new matter is added by this amendment.

Claim Objections

Claims 1-4 are objected to as containing various informalities. In response, various editorial revisions are made in claims 1 and 3. The objections are accordingly believed moot and should be withdrawn.

Rejection of Claims 1-2 and 4 under 35 USC 102(b)

Claims 1-2 and 4 stand rejected under 35 USC 102(b) as being anticipated by Ward et al U.S. Patent No. 6,017,834. This rejection respectfully is traversed.

By way of review, applicants' claimed invention is a liquid-crystalline resin composition which comprises 0.01 to 10 parts by weight of an ultra-high molecular weight polyethylene having a molecular weight in excess of 600,000 and 100 parts by weight of a liquid-crystalline resin that exhibits anisotropic liquid-crystalline properties in a molten state. Applicants' claimed invention is neither disclosed nor suggested by the cited Ward patent.

Ward is directed to a monolithic polymeric product which is produced from a molecularly oriented melt spun or gel spun fibers of a thermoplastic polymer. The patent teaches that the thermoplastic polymer may be comprised of a polyolefin such as polyethylene. Alternatively, the polymer may be comprised of a vinyl polymer, a substituted polyester, a polyamide, a polyetherketone, or a polyacetal. However, Ward does not anticipate the claimed composition comprised of an ultra-high molecular weight polyethylene together with a liquid-crystalline resin that exhibits anisotropic properties in the molten state.

Ward is silent with respect to such a mixture of polymeric components.

The Examiner takes the position that Ward discloses a monolithic polymer having high stiffness and strength comprising a liquid crystalline polyethylene spun material such as parahydroxybenzoic acid. The Examiner concludes that "anisotropic properties may be exhibited in the molten state".

Even if the Examiner's statement is true, the Examiner ignores the fact that the reference does not disclose the claimed combination of ultra-high molecular weight polyethylene and liquid-crystalline resin. The Examiner makes no reference to any portion of the reference which is directed to or suggests such a combination.

In view of the above, the rejection is without basis and should be withdrawn.

Rejection of Claim 3 under 35 USC 103(a)

Claim 3 stands rejected under 35 USC 103(a) as being unpatentable over Ward in view of Nagashima et al U.S. Patent No. 6,194,524. This rejection respectfully is traversed.

The deficiencies of Ward are discussed at length above. In summary, Ward fails to disclose or suggest the claimed

combination of ultra-high molecular weight polyethylene together with a liquid-crystalline resin having anisotropic properties in the melt phase.

Nagashima et al fails to overcome the deficiencies of Ward. Nagashima is directed to a thermoplastic resin composition comprised of two or more thermoplastic resins together with a polyester (as defined). A variety of thermoplastic resins suitable for use in the disclosed composition are taught at column 3, lines 54-68 of the patent.

However, Nagashima fails to disclose or suggest the claimed composition. Nagashima makes no mention of the use of an ultra-high molecular weight polyester having a molecular weight in excess of 600,000. As a result, the recited combination of the two references cannot result in the claimed invention.

Applicants' comparative data rebuts any suggestion that the recited combination yields the claimed invention. The Examiner's attention is directed to applicants' Table 1 at page 18 of the specification in this regard. Table 1 confirms that the combination of the ultra-high molecular weight polyethylene (molecular weight in excess of 600,000) together with a liquid-crystalline resin yields a composition which exhibits highly

desirable mold release properties and desirable blister scores. See Examples 1-4.

Comparative examples 1-7 confirm that compositions falling outside the scope of the claims do not provide the desirable results exhibited by examples 1-4. Comparative example 4 contains only a liquid-crystalline polymer and no polyethylene component. Comparative examples 2-7 contain a polyethylene component - but the polyethylene component is not an ultra-high molecular weight polyethylene. In each case the mold release properties are inferior to those exhibited by Examples 1-4.

The rejection is thus improper and should be withdrawn.

The application is now believed to be in condition for allowance and an early indication of same is earnestly solicited.

In the event that any outstanding matters remain in this application, Applicants request that the Examiner contact James W. Hellwege (Reg. No. 28,808) at (703) 205-8000 to discuss such matters.

Applicant respectfully petitions under the provisions of 37 CFR 1.136(a) and 1.17 for a one-month extension of time in which to respond to the Examiner's Official Action. The Extension of Time fee in the amount of $110.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

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SPECIFICATION AMENDMENTS WITH MARKINGS TO SHOW CHANGES

Replace the paragraph at page 1, lines 2-5 with the following paragraph:

- - The present invention relates to a liquid-crystalline resin composition that is excellent in mold-releasing property when used for molding and that has [a less] decreased possibility of deformation or fracture when a molding is released from a mold, and to a molding using the same. - -

Replace the paragraph at page 1, lines 8-19 with the following paragraph:

- - Liquid-crystalline resins comprise a poly-domain having a liquid-crystalline state without causing interlocking even in a molten state because of [their] the rigidity of the molecule and show a behavior in which molecular chains are remarkably oriented [showabehaviorinwhichmolecularchainsareremarkablyoriented] in the flow direction due to shear during molding. Therefore, they are generally called melt liquid-crystal type (thermotropic liquid-crystal) polymers. Because of this special behavior, the liquid-crystalline resins have significantly [goodmeltflowability] good melt flowability. Depending on their

molecular structures [Dependingontheirmolecularstructures], they show a high deflection temperature under load and a high continuous-use temperature, and do not cause deformation or blistering when immersed in a molten solder at 260 °C or more.- -

Replace the paragraph at page 2, lines 7-23 with the following paragraph:

- - In the trend towards a light-thin-short-small in recent years, however, thinner and smaller shapes of products have become more strongly demanded, and many products have a thickness [becomemorestronglydemanded,andmanyproductshaveathickness] of 0.2 mm or less. In moldings having such thin part, molding [isverydifficultevenforliquid-crystallineresinsandmolding] is very difficult even for liquid-crystalline resins and molding defects such as short shot, flash and the like [are often occurred] often occur. In order to avoid these defects, it has been necessary to increase injection rate or pressure. This requires higher pressure to be applied on a product [on taking out of] upon removing the product from a mold, or on release from a mold. As [the] a result, problems occasionally occur [that a] such as where the product is deformed or fractured on

[releasing] being released from a mold, depending on a shape of the product or [a] the structure of a mold, resulting in size-precision failure of the product or [remaining of] a fractured piece formed during production being left in a mold. The latter produces significant decrease in productivity due to [temporary] the need to temporarily stop [of] production in order to remove the piece.- -

Replace the paragraph at page 4, lines 8-13 with the following new paragraph:

- - Therefore, the invention provides a liquid-crystalline resin composition comprising 0.01 to 10 parts by weight of an ultra-high molecular weight polyethylene having a molecular weight in excess of [exceed] 600,000 and 100 parts by weight of a liquid-crystalline resin that [shows] exhibits an anisotropic liquid-crystalline state in a molten state. - -

Replace the paragraph at page 11, lines 15-22 with the following new paragraph:

- - The ultra-high molecular weight polyethylene used in the liquid-crystalline resin composition of the invention should have a molecular weight in excess of [exceed] 600,000. It [has]

preferably has a molecular weight in excess of [exceed] 800,000 and more preferably a molecular weight in excess of [exceed] 1,000,000. Such a polyethylene may be a commercially available product. Examples include grades having a molecular weight in excess of [exceed] 600,000 among grades of Million, trade name, manufactured by Mitsui Chemicals, Inc. - -

Replace the paragraph at page 11,line 23 to page 12, lines 6 with the following new paragraph:

- - While commercially available ultra-high molecular weight polyethylene include various grade having different particle sizes and shapes according to use, the particle sizes and shapes of ultra-high molecular weight polyethylenes do not influence the effect for the use of the invention. Depending on types [ofkneadingmachinesusedforadditiontotheliquid-crystalline] of kneading machines used for addition to the liquid-crystalline resin, however, shapes of the ultra-high molecular weight polyethylenes are desirably flakes, powders, pellets or the like. - -

CLAIM AMENDMENTS WITH MARKINGS TO SHOW CHANGES

Claims 1 and 3 are amended as follows:

1. (Amended) A liquid-crystalline resin composition comprising 0.01 to 10 parts by weight of an ultra-high molecular weight polyethylene having a molecular weight in excess of [exceed] 600,000 and 100 parts by weight of a liquid-crystalline resin that [shows] exhibits [an] anisotropic liquid-crystalline [state] properties in a molten state.

3. (Amended) The liquid-crystalline resin composition according to claim 1, wherein the liquid-crystalline resin is a liquid-crystalline resin which [shows] exhibits a flow temperature of 260 to 400 °C at a melt viscosity of 48,000 poise, when the melt resin [melted by heating] is extruded from a nozzle at a heat-up rate of 4°C/minute under a load of 100kg/cm^2 using a capillary rheometer with a nozzle having an inside diameter of 1mm and a length of 10mm.